Ministry of Higher Education and Scientific Research

Mustansiriyah University /College of Science

Department of Atmospheric sciences

(الخطة الدراسية للمساق)

Course Plan

Course No.: undergraduate stage

Course Name: Renewable Energy

Course Website: https://uomustansiriyah.edu.iq/e-learn/profile.php?id=274

Time Division 2 hours

Semester & Year: First, 2022 / 2023

Course Description

The course is an introduction to the concepts of renewable energy and its types and applications, with an explanation to the difference between renewable, non-renewable and alternative energy. The course also provides the basic physics and equations of these energies.

Course Intended Outcomes:

At the end of the course, students expected to learn: the different between Energy and renewable energy and the Alternative Energy, and learn all types of renewable energy; solar energy, wind energy, hydro energy, tilde energy, geothermal energy, Biomass energy and there (Advantages and disadvantage), physics and applications.

Course Outline:

Week	Description depends on the Timing table (Theoretical & Practical)
1	**Energy, Work, Power:** **What is energy, what is work, what is power, the heat, the radiation, energy units.**
2	**Energy forms I:** **Kinetic energy; radiation energy, thermal energy, motion energy, electrical energy, sound.**
3	**Energy forms II:** **Potential energy; chemical energy, nuclear energy, gravitational energy, stored mechanical energy.**
4	**Energy resources:** **Primary energy, secondary energy, transformation primary energy to secondary energy.**
5	**Non-renewable energy:** **oil, gas, coal, nuclear energy; advantage and disadvantage**
6	**Renewable energy:** Definitions of Renewable Energy, Characteristics of Renewable Energy, types of renewable energy.
7	**Alternative energy:**

	Definitions of alternative energy, **the deferent between** Renewable Energy **and alternative energy.**
8	**First Exam**
9	**Solar Energy**
10	**Wind Energy**
11	**Geothermal Energy**
12	**Hydro Energy**
13	**Tidal Energy**
14	**Biomass Energy**
15	**Second Exam**

Textbooks:

[1]: Vaughn Nelson,(2011), introduction to renewable Energy, Taylor & Francis Group, p 376.

Suggested references:

[1]: John Twidell, Tony Weir, (2015), Renewable Energy Resources,3rd edition, , Taylor & Francis Group, p817.

[2]: Soteris A. Kalogirou, (2014), Solar Energy Engineering Processes and Systems, 2nd edition, Elsevier Inc., p815.

Marking:

First Semester				Final Exam
1st exam	2nd exam	Practical	Activity	
25	25		5	70

Assignment/ Project	Description	Due Date	Marking

Instructor(s) information [معلومات الأستاذ]

Section: (Atmospheric department) ; Lecture Room:[202] ; Office No.: (5)

Instructor's Name: Prof. Dr. Hazim H. Hussain

E-Mail: dr.hazim@uomustansiriyah.edu.iq

Office Hours : Thursday (10:30-02:30)

NOTES:

- ***Office Hours: Other office hours are available by appointment.***
- ***The content of this syllabus not be changed during the current semester.***

Lecturer Signature

Chairman Signature

أ.م.د. أسراء قحطان عبد الكريم

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